

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

**Claim 1 (currently amended): A method of manufacturing a crystal of a group III-V crystal compound, characterized in the method comprising:**

**a deposition step of depositing a metal film on a substrate;**

**a heat-treatment step of heat-treating the metal film under an atmosphere in which a metal-film patterning compound is present; and**

**a growth step of growing a group III-V crystal on the post-heat-treated metal film.**

**Claim 2 (currently amended): A method of manufacturing a crystal of a group III-V crystal compound, characterized in the method comprising:**

**a deposition step of depositing a metal film on a substrate;**

**a heat-treatment step of heat-treating the metal film under an atmosphere in which a metal-film patterning compound is present;**

**a first growth step of growing a group III-V compound buffer film on the post-heat-treated metal film; and**

**a second growth step of growing a group III-V crystal on the group III-V compound buffer film.**

**Claim 3 (currently amended): A group III-V crystal manufacturing method as set forth in ~~either claim 1 or 2~~ claim 1, characterized in that wherein:**

**~~holes or grooves formed in the metal film by the heat-treating of the metal film under an atmosphere in which a patterning compound is present~~**

**said heat-treatment step have an average width of 2 nm to 5000 nm ~~[[,]]~~ ; and**

**the aperture fraction, being the percentage of the surface area that the holes or grooves occupy with respect to the substrate total surface area, is 5% to 80%.**

**Claim 4 (currently amended): A group III-V crystal manufacturing method as set forth in ~~any of claims 1 to 3~~ claim 1, characterized in that the substrate is silicon, sapphire, SiC, ZrB<sub>2</sub>, or a group III-V compound.**

**Claim 5 (currently amended): A group III-V crystal manufacturing method as set forth in ~~any of claims 1 to 4~~ claim 1, characterized in that the metal film contains titanium or vanadium.**

**Claim 6 (currently amended): A group III-V crystal manufacturing method as set forth in ~~any of claims 1 to 5, rendering~~ claim 1, wherein the method renders the thickness of the metal film to be 10 nm to 1000 nm.**

**Claim 7 (currently amended): A group III-V crystal manufacturing method as set forth in ~~any of claims 1 to 6~~ claim 1, characterized in that the heat treatment is carried out at 800°C to 1200°C for 0.5 minutes to 20 minutes.**

**Claim 8 (currently amended): A group III-V compound crystal manufactured by a group III-V crystal manufacturing method as set forth in ~~any of claims 1 to 7~~ claim 1.**

**Claim 9 (currently amended): A group III-V compound crystal as set forth in claim 8, wherein the group III-V crystal ~~being~~ is  $\text{Ga}_x\text{Al}_y\text{In}_{1-x-y}$  ( $0 \leq x \leq 1$  and  $0 \leq y \leq 1$ ).**

**Claim 10 (new): A group III-V crystal manufacturing method as set forth in claim 2, wherein:**

**holes or grooves formed in the metal film by said heat-treatment step have an average width of 2 nm to 5000 nm; and**

**the aperture fraction, being the percentage of the surface area that the holes or grooves occupy with respect to the substrate total surface area, is 5% to 80%.**

**Claim 11 (new): A group III-V crystal manufacturing method as set forth in claim 2, characterized in that the substrate is silicon, sapphire, SiC, ZrB<sub>2</sub>, or a group III-V compound.**

**Claim 12 (new): A group III-V crystal manufacturing method as set forth in claim 2, characterized in that the metal film contains titanium or vanadium.**

**Claim 13 (new): A group III-V crystal manufacturing method as set forth in claim 2, wherein the method renders the thickness of the metal film to be 10 nm to 1000 nm.**

**Claim 14 (new): A group III-V crystal manufacturing method as set forth in claim 2, characterized in that the heat treatment is carried out at 800°C to 1200°C for 0.5 minutes to 20 minutes.**

**Claim 15 (new): A group III-V compound crystal manufactured by a group III-V crystal manufacturing method as set forth in claim 2.**

**Claim 16 (new): A group III-V compound crystal as set forth in claim 15, wherein the group III-V crystal is  $\text{Ga}_x\text{Al}_y\text{In}_{1-x-y}$  ( $0 \leq x \leq 1$  and  $0 \leq y \leq 1$ ).**